

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/511,130
Source: PCP/10
Date Processed by STIC: 9/19/05

ENTERED



PCT

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/511,130

DATE: 09/19/2005

TIME: 15:08:40

Input Set : A:\PTO.KD.txt
 Output Set: N:\CRF4\09192005\J511130.raw

3 <110> APPLICANT: The University of Newcastle
 4 Connolly, Bernard
 5 Fogg, Mark
 6 Pearl, Laurence
 8 <120> TITLE OF INVENTION: DNA POLYMERASES
 10 <130> FILE REFERENCE: P89103PWO
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/511,130
 C--> 13 <141> CURRENT FILING DATE: 2004-10-13
 15 <160> NUMBER OF SEQ ID NOS: 32
 17 <170> SOFTWARE: PatentIn version 3.1
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 776
 21 <212> TYPE: PRT
 22 <213> ORGANISM: Unknown
 24 <220> FEATURE:
 25 <223> OTHER INFORMATION: Variant derived from Pyrococcus furiosus Pfu-Polymerase
 27 <400> SEQUENCE: 1
 29 Met Ala Ile Leu Asp Val Asp Tyr Ile Thr Glu Glu Gly Lys Pro Val
 30 1 5 10 15
 33 Ile Arg Leu Phe Lys Lys Glu Asn Gly Lys Phe Lys Ile Glu His Asp
 34 20 25 30
 37 Arg Thr Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Arg Asp Asp Ser Lys
 38 35 40 45
 41 Ile Glu Glu Val Lys Lys Ile Thr Gly Glu Arg His Gly Lys Ile Val
 42 50 55 60
 45 Arg Ile Val Asp Val Glu Lys Val Glu Lys Lys Phe Leu Gly Lys Pro
 46 65 70 75 80
 49 Ile Thr Val Trp Lys Leu Tyr Leu Glu His Pro Gln Asp Val Pro Thr
 50 85 90 95
 53 Ile Arg Glu Lys Val Arg Glu His Pro Ala Val Val Asp Ile Phe Glu
 54 100 105 110
 57 Tyr Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile
 58 115 120 125
 61 Pro Met Glu Gly Glu Glu Leu Lys Ile Leu Ala Phe Asp Ile Glu
 62 130 135 140
 65 Thr Leu Tyr His Glu Gly Glu Glu Phe Gly Lys Gly Pro Ile Ile Met
 66 145 150 155 160
 69 Ile Ser Tyr Ala Asp Glu Asn Glu Ala Lys Val Ile Thr Trp Lys Asn
 70 165 170 175
 73 Ile Asp Leu Pro Tyr Val Glu Val Val Ser Ser Glu Arg Glu Met Ile
 74 180 185 190
 77 Lys Arg Phe Leu Arg Ile Ile Arg Glu Lys Asp Pro Asp Ile Ile Val
 78 195 200 205

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81 Thr Tyr Asn Gly Asp Ser Phe Asp Phe Pro Tyr Leu Ala Lys Arg Ala
 82 210 215 220
 85 Glu Lys Leu Gly Ile Lys Leu Thr Ile Gly Arg Asp Gly Ser Glu Pro
 86 225 230 235 240
 89 Lys Met Gln Arg Ile Gly Asp Met Thr Ala Val Glu Val Lys Gly Arg
 90 245 250 255
 93 Ile His Phe Asp Leu Tyr His Val Ile Thr Arg Thr Ile Asn Leu Pro
 94 260 265 270
 97 Thr Tyr Thr Leu Glu Ala Val Tyr Glu Ala Ile Phe Gly Lys Pro Lys
 98 275 280 285
 101 Glu Lys Val Tyr Ala Asp Glu Ile Ala Lys Ala Trp Glu Ser Gly Glu
 102 290 295 300
 105 Asn Leu Glu Arg Val Ala Lys Tyr Ser Met Glu Asp Ala Lys Ala Thr
 106 305 310 315 320
 109 Tyr Glu Leu Gly Lys Glu Phe Leu Pro Met Glu Ile Gln Leu Ser Arg
 110 325 330 335
 113 Leu Val Gly Gln Pro Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn
 114 340 345 350
 117 Leu Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Glu Arg Asn Glu Val
 118 355 360 365
 121 Ala Pro Asn Lys Pro Ser Glu Glu Glu Tyr Gln Arg Arg Leu Arg Glu
 122 370 375 380
 125 Ser Tyr Thr Gly Gly Phe Val Lys Glu Pro Glu Lys Gly Leu Trp Glu
 126 385 390 395 400
 129 Asn Ile Val Tyr Leu Asp Phe Arg Ala Leu Tyr Pro Ser Ile Ile Ile
 130 405 410 415
 133 Thr His Asn Val Ser Pro Asp Thr Leu Asn Leu Glu Gly Cys Lys Asn
 134 420 425 430
 137 Tyr Asp Ile Ala Pro Gln Val Gly His Lys Phe Cys Lys Asp Ile Pro
 138 435 440 445
 141 Gly Phe Ile Pro Ser Leu Leu Gly His Leu Leu Glu Glu Arg Gln Lys
 142 450 455 460
 145 Ile Lys Thr Lys Met Lys Glu Thr Gln Asp Pro Ile Glu Lys Ile Leu
 146 465 470 475 480
 149 Leu Asp Tyr Arg Gln Lys Ala Ile Lys Leu Leu Ala Asn Ser Phe Tyr
 150 485 490 495
 153 Gly Tyr Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala
 154 500 505 510
 157 Glu Ser Val Thr Ala Trp Gly Arg Lys Tyr Ile Glu Leu Val Trp Lys
 158 515 520 525
 161 Glu Leu Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ile Asp Thr Asp
 162 530 535 540
 165 Gly Leu Tyr Ala Thr Ile Pro Gly Gly Glu Ser Glu Glu Ile Lys Lys
 166 545 550 555 560
 169 Lys Ala Leu Glu Phe Val Lys Tyr Ile Asn Ser Lys Leu Pro Gly Leu
 170 565 570 575
 173 Leu Glu Leu Glu Tyr Glu Gly Phe Tyr Lys Arg Gly Phe Phe Val Thr
 174 580 585 590
 177 Lys Lys Arg Tyr Ala Val Ile Asp Glu Glu Gly Lys Val Ile Thr Arg

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178	595	600	605
181	Gly Leu Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr		
182	610	615	620
185	Gln Ala Arg Val Leu Glu Thr Ile Leu Lys His Gly Asp Val Glu Glu		
186	625	630	635
189	640		
190	Ala Val Arg Ile Val Lys Glu Val Ile Gln Lys Leu Ala Asn Tyr Glu		
193	645	650	655
194	Ile Pro Pro Glu Lys Leu Ala Ile Tyr Glu Gln Ile Thr Arg Pro Leu		
197	660	665	670
198	His Glu Tyr Lys Ala Ile Gly Pro His Val Ala Val Ala Lys Lys Leu		
201	675	680	685
202	Ala Ala Lys Gly Val Lys Ile Lys Pro Gly Met Val Ile Gly Tyr Ile		
205	690	695	700
206	Val Leu Arg Gly Asp Gly Pro Ile Ser Asn Arg Ala Ile Leu Ala Glu		
209	705	710	715
210	720		
213	Glu Tyr Asp Pro Lys Lys His Lys Tyr Asp Ala Glu Tyr Tyr Ile Glu		
214	725	730	735
217	Asn Gln Val Leu Pro Ala Val Leu Arg Ile Leu Glu Gly Phe Gly Tyr		
218	740	745	750
221	Arg Lys Glu Asp Leu Arg Tyr Gln Lys Thr Arg Gln Val Gly Leu Thr		
222	755	760	765
225	Ser Trp Leu Asn Ile Lys Lys Ser		
226	770	775	
225	<210> SEQ ID NO: 2		
226	<211> LENGTH: 775		
227	<212> TYPE: PRT		
228	<213> ORGANISM: Pyrococcus furiosus		
230	<400> SEQUENCE: 2		
232	Met Ile Leu Asp Val Asp Tyr Ile Thr Glu Glu Gly Lys Pro Val Ile		
233	1	5	10
236	15		
237	Arg Leu Phe Lys Lys Glu Asn Gly Lys Phe Lys Ile Glu His Asp Arg		
240	20	25	30
241	240	245	250
244	Thr Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Arg Asp Asp Ser Lys Ile		
245	35	40	45
248	Glu Glu Val Lys Lys Ile Thr Gly Glu Arg His Gly Lys Ile Val Arg		
249	50	55	60
252	248	253	258
253	Ile Val Asp Val Glu Lys Val Glu Lys Lys Phe Leu Gly Lys Pro Ile		
256	65	70	75
257	80		
258	Thr Val Trp Lys Leu Tyr Leu Glu His Pro Gln Asp Val Pro Thr Ile		
259	85	90	95
260	252	257	262
261	Arg Glu Lys Val Arg Glu His Pro Ala Val Val Asp Ile Phe Glu Tyr		
264	100	105	110
265	Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro		
266	115	120	125
268	264	269	270
269	Met Glu Gly Glu Glu Leu Lys Ile Leu Ala Phe Asp Ile Glu Thr		
272	130	135	140
272	Leu Tyr His Glu Gly Glu Phe Gly Lys Gly Pro Ile Ile Met Ile		
272	145	150	155
272	Ser Tyr Ala Asp Glu Asn Glu Ala Lys Val Ile Thr Trp Lys Asn Ile		

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Input Set : A:\PTO.KD.txt
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273	165	170	175
276	Asp Leu Pro Tyr Val Glu Val Val Ser Ser Glu Arg Glu Met Ile Lys		
277	180	185	190
280	Arg Phe Leu Arg Ile Ile Arg Glu Lys Asp Pro Asp Ile Ile Val Thr		
281	195	200	205
284	Tyr Asn Gly Asp Ser Phe Asp Phe Pro Tyr Leu Ala Lys Arg Ala Glu		
285	210	215	220
288	Lys Leu Gly Ile Lys Leu Thr Ile Gly Arg Asp Gly Ser Glu Pro Lys		
289	225	230	235
292	240	245	250
293	Met Gln Arg Ile Gly Asp Met Thr Ala Val Glu Val Lys Gly Arg Ile		
296	255	260	265
297	His Phe Asp Leu Tyr His Val Ile Thr Arg Thr Ile Asn Leu Pro Thr		
300	270	275	280
301	285	290	295
304	300	305	310
308	Lys Val Tyr Ala Asp Glu Ile Ala Lys Ala Trp Glu Ser Gly Glu Asn		
312	315	320	325
313	Glu Leu Gly Lys Glu Phe Leu Pro Met Glu Ile Gln Leu Ser Arg Leu		
316	330	335	340
317	345	350	355
320	350	355	360
321	365	360	365
324	370	375	380
328	385	390	395
332	400	405	410
333	415	420	425
336	430	435	440
337	445	450	455
340	450	455	460
344	460	465	470
345	475	480	485
348	490	495	500
349	505	510	515
352	520	525	530
356	535	540	545
357	550	555	560
360	Leu Tyr Ala Thr Ile Pro Gly Gly Glu Ser Glu Glu Ile Lys Lys Lys		
364	file:///C:/CRF4/Outhold/VsrJ511130.htm		
365	9/19/05		
368	545	550	555
369	560		

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372 Ala Leu Glu Phe Val Lys Tyr Ile Asn Ser Lys Leu Pro Gly Leu Leu
 373 565 570 575
 376 Glu Leu Glu Tyr Glu Gly Phe Tyr Lys Arg Gly Phe Phe Val Thr Lys
 377 580 585 590
 380 Lys Arg Tyr Ala Val Ile Asp Glu Glu Gly Lys Val Ile Thr Arg Gly
 381 595 600 605
 384 Leu Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln
 385 610 615 620
 388 Ala Arg Val Leu Glu Thr Ile Leu Lys His Gly Asp Val Glu Glu Ala
 389 625 630 635 640
 392 Val Arg Ile Val Lys Glu Val Ile Gln Lys Leu Ala Asn Tyr Glu Ile
 393 645 650 655
 396 Pro Pro Glu Lys Leu Ala Ile Tyr Glu Gln Ile Thr Arg Pro Leu His
 397 660 665 670
 400 Glu Tyr Lys Ala Ile Gly Pro His Val Ala Val Ala Lys Lys Leu Ala
 401 675 680 685
 404 Ala Lys Gly Val Lys Ile Lys Pro Gly Met Val Ile Gly Tyr Ile Val
 405 690 695 700
 408 Leu Arg Gly Asp Gly Pro Ile Ser Asn Arg Ala Ile Leu Ala Glu Glu
 409 705 710 715 720
 412 Tyr Asp Pro Lys Lys His Lys Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn
 413 725 730 735
 416 Gln Val Leu Pro Ala Val Leu Arg Ile Leu Glu Gly Phe Gly Tyr Arg
 417 740 745 750
 420 Lys Glu Asp Leu Arg Tyr Gln Lys Thr Arg Gln Val Gly Leu Thr Ser
 421 755 760 765
 424 Trp Leu Asn Ile Lys Lys Ser
 425 770 775
 428 <210> SEQ ID NO: 3
 429 <211> LENGTH: 776
 430 <212> TYPE: PRT
 431 <213> ORGANISM: Unknown
 433 <220> FEATURE:
 434 <223> OTHER INFORMATION: Variant derived from Pyrococcus furiosus Pfu-Polymerase
 436 <400> SEQUENCE: 3
 438 Met Ala Ile Leu Asp Val Asp Ala Ile Thr Glu Glu Gly Lys Pro Val
 439 1 5 10 15
 442 Ile Arg Leu Phe Lys Lys Glu Asn Gly Lys Phe Lys Ile Glu His Asp
 443 20 25 30
 446 Arg Thr Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Arg Asp Asp Ser Lys
 447 35 40 45
 450 Ile Glu Glu Val Lys Lys Ile Thr Gly Glu Arg His Gly Lys Ile Val
 451 50 55 60
 454 Arg Ile Val Asp Val Glu Lys Val Glu Lys Lys Phe Leu Gly Lys Pro
 455 65 70 75 80
 458 Ile Thr Val Trp Lys Leu Tyr Leu Glu His Pro Gln Asp Val Pro Thr
 459 85 90 95
 462 Ile Arg Glu Lys Val Arg Glu His Pro Ala Val Val Asp Ile Phe Glu
 463 100 105 110

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/511,130

DATE: 09/19/2005

TIME: 15:08:41

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\09192005\J511130.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application Number

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date